

## Patent Claims

5 1. A muffler, in particular for internal combustion engines, having a housing (2) through which a flow medium flows and which has at least one housing chamber (3, 5) and in which deflecting elements (13 to 16) serving to make the flow medium swirl are arranged one  
10 behind another along a main axis (19') of the housing and in a positionally fixed manner at a distance from one another, wherein an originally disk-shaped body (17') having slots (18') is provided as deflecting element (13, 14, 15, 16) and extends over the clear  
15 cross section of the housing (2), and wherein guiding elements (18) which bound the slots (18'), are in the manner of guide vanes and belong to adjacent, disk-shaped bodies (17') deflect the flow in different directions with respect to the main axis (19') of the  
20 housing.

2. The muffler as claimed in claim 1, wherein the guiding elements (18) of adjacent, disk-shaped bodies (17') are in each case angled in an opposite direction  
25 to one another.

3. The muffler as claimed in claim 1, wherein the disk-shaped bodies (17') are in each case slotted  
5 rectilinearly.

4. The muffler as claimed in claim 1, wherein all of the guiding elements (18) of a disk-shaped body (17') are angled in the same direction.

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5. The muffler as claimed in claim 1, wherein the setting angle ( $\alpha$ ) of the guiding elements (18) is positive or negative.

15 6. The muffler as claimed in claim 1, wherein those ends of the guiding elements (18) which are arranged at a distance from the main axis (19') of the housing are more sharply angled than their ends which are situated near the main axis (19') of the housing.

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7. The muffler as claimed in claim 1, wherein the guiding elements (18) are at least partially twisted in themselves.

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8. The muffler as claimed in claim 1, wherein the disk-shaped body (17') as a blank is in the form of a circular ring.

9. The muffler as claimed in claim 1, wherein the guiding elements (18) are in the form of a sector of a circular ring.

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10. The muffler as claimed in claim 1, wherein the deflecting elements (13 to 16) are arranged with their guiding elements (18) between housing chamber parts (2') and (3') without deflecting elements.

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11. The muffler as claimed in claim 1, wherein the deflecting elements (13 to 16) each form a muffler stage.

20 12. The muffler as claimed in claim 1, comprising the arrangement of three to five or more deflecting elements (13 to 16) each forming a muffler stage.

25 13. The muffler as claimed in claim 1, wherein each muffler stage/each deflecting element has approximately 10 to 40, preferably approximately 20, guiding elements

(18) which are each in the form of a sector of a circular ring in layout.

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14. The muffler as claimed in claim 1, wherein the deflecting elements (13 to 16) each integrally have a hub part (17) and slots (18') radially outward therefrom and the guiding elements (18) in the manner  
10 of guide vanes.

15. The muffler as claimed in claim 1, wherein the deflecting elements (13 to 16) are in each case arranged on a supporting pipe (11) which conducts the  
15 gaseous medium.

16. The muffler as claimed in claim 1, wherein the deflecting elements (13 to 16) having guiding elements (18) are manufactured in each case as disk-shaped  
20 bodies (17') from flat sheet-metal rings and as disk blanks have narrow slots (18') which extend radially and rectilinearly from the outside to the inside.

17. The muffler as claimed in claim 1, wherein the  
25 deflecting elements (13 to 16) are provided, in

alternating fashion in the direction of flow, with  
guiding elements (18) which are set in opposite  
5 directions and are in the manner of guide vanes.

18. The muffler as claimed in claim 17, wherein the  
setting angles which are inclined in opposite  
directions (from  $+\alpha'$  to  $-\alpha$ ) have the same absolute  
10 angular value.

19. The muffler as claimed in claim 1, wherein the  
deflecting elements (13 to 16) are arranged with a hub  
part (17) on a supporting element (11)/support (24)  
15 arranged centrally in the housing (2).

20. The muffler as claimed in claim 1, wherein the  
axial length of the housing (2) and/or of a housing  
part (3, 5) is/are dimensioned in such a manner that a  
20 different number of deflecting elements (13 to 16)  
adapted to the particular application can be fitted.

21. The muffler as claimed in claim 1, comprising its  
use for the internal combustion engine of a model  
25 aircraft.

22. A muffler for internal combustion engines, having  
a housing (2) through which a flow medium/gaseous  
5 medium flows and which has at least one housing chamber  
(3, 5) and in which deflecting elements (13 to 16)  
serving to make the gaseous medium swirl are arranged  
one behind another along a main axis (19') of the  
housing and in a positionally fixed manner at a  
10 distance from one another, which comprises deflecting  
elements (13 to 16) in the housing (2) in such a manner  
and a resultantly induced swirling of the gaseous  
medium in such a manner that the sound vibrations  
cancel one another out.